Historic, Archive Document

Do not assume content reflects current
scientific knowledge, policies, or practices.

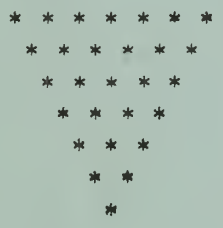
1.96
R31Fsr
Mar. 1943
Reserve

SNOW SURVEYS AND IRRIGATION WATER FORECASTS

for the

RIO GRANDE DRAINAGE BASIN

March 1, 1943



LIBRARY
RECEIVED
★ MAR 20 1943 ★
U. S. Department of Agriculture

Issued by the
United States Department of Agriculture
Soil Conservation Service
Division of Irrigation
In Cooperation with
The Colorado Agricultural Experiment Station
Colorado State College
Fort Collins, Colorado

March 10, 1943

SNOW SURVEYS AND IRRIGATION WATER FORECASTS
for
RIO GRANDE BASIN

March 1, 1943

The following data pertaining to snow surveys and irrigation water-supply forecasts are provided by the Division of Irrigation, Soil Conservation Service of the U. S. Department of Agriculture, in cooperation with other Federal Bureaus, State Departments, and local organizations. The snow measurements are made principally by field personnel of the U. S. Forest Service and Colorado State Engineer. This work is otherwise conducted cooperatively with the State Engineers of Colorado and New Mexico, Colorado Agricultural Experiment Station, and various municipalities, irrigation associations and others. Precipitation records are supplied by the U. S. Weather Bureau.

PRECIPITATION DATA

WATERSHED	STATE	Precipitation October 1 to February 28	Departure from Normal	Precipitation February	Departure from Normal
		Inches	Inches	Inches	Inches
Canadian	New Mexico	3.60	+0.32	0.15	-0.35
Rio Grande	Colorado	6.96	+0.97	1.05	-0.37
Rio Grande	New Mexico	3.98	-1.32	0.50	-0.65
Pecos	New Mexico	3.98	+0.32	0.09	-0.53

SUMMARY OF MARCH 1 SNOW SURVEYS AND COMPARISON OF DATA WITH THAT OF PREVIOUS YEARS BY WATERSHEDS

WATERSHEDS	Snow Depth			Water Content			Number Courses in Average	Snow Density			1943 Water Content in percent of	
	Seven Year Avg.*	1942	1943	Seven Year Avg.*	1942	1943		Seven Year Avg.*	1942	1943	Seven year Avg.*	1942
	In.	In.	In.	In.	In.	In.		Percent	Percent	Percent		
Rio Grande	31.7	31.8	26.2	8.9	7.6	7.9	22	28	24	30	89	104
Canadian River	16.2	15.2	9.0	4.6	3.4	2.0	2	28	22	22	44	59

*Some for shorter periods.

WATER SUPPLY OUTLOOK

During February over the Rio Grande, Canadian and Pecos drainage areas the precipitation has been below normal. Since last October it was above normal except for the Rio Grande in New Mexico where the deficiency was 1.32 inches. In Colorado it was in excess by about one inch.

RIO GRANDE. On the Rio Grande watershed and its tributaries, in northern New Mexico and the San Luis Valley in Colorado, the water content of the snow, as based on the average of 22 snow courses, was 7.8 inches. Last year at this time the snow contained 7.5 inches. The past seven-year average is 9.5 inches for these same courses. During February the accumulation of snow at the high elevations has been fairly good. At Summitville the water content of the snow increased nearly five inches and on Wolf Creek Pass more than three inches during the month. Snow pack on Cumbres Pass is five inches more than a year ago. The best snow throughout the drainage area is on Wolf Creek Pass where the water content is nearly 24 inches, last year 20, and the average 22.4 inches as of March 1st. On Canjilon Pass the present water content of the snow is normal and nearly seven inches more than last year at this time. The general average of the water content of the snow for the courses on the Rio Grande drainage in New Mexico is practically identical with that of last year.

In the San Luis Valley soil moisture conditions are spotted. Generally, for the whole irrigated area the ground conditions are fair. Stream flow in this section is more or less average. Because of the present cover of new snow in the valley range & crop prospectsare now materially improved. In the lower Rio Grande the soil moisture is fair and stream flow normal. The reservoir storage in the San Luis Valley area is on the increase. It is expected that the principal reservoirs will fill before the beginning of the irrigation season. Storage in Elephant Butte and Caballo reservoirs has increased during the month and now stand at about 95 percent of that of last year or 80 percent of capacity. The El Vado Reservoir, on the Chama, now stores nearly 50,000 acre-feet of water or approximately one-quarter of its capacity.

CANADIAN AND PECOS. The snow cover on these watersheds is below average and less than it was a year ago. Precipitation since last October on these drainages has been slightly above normal and for February 0.35 and 0.53 inches below normal, respectively. The soil moisture in the irrigated areas of these valleys is fair to good and stream flow about normal. Conchas Reservoir, on the Canadian, has 287,000 acre-feet of water now in storage or approximately at one-half capacity. In the Carlsbad area, on the Pecos, soil moisture is fair and range conditions are becoming dry. Crop conditions are good in the irrigated areas. Reservoirs are now well filled.

The outlook for the coming season's runoff in the Rio Grande has not materially changed during the month of February. The snow cover on this drainage is now essentially the same as it was a year ago and the principal storage reservoirs will no doubt fill before the start of the irrigation season. The general outlook for the Rio Grande is at this time favorable for the coming season's irrigation water supply. For the Canadian and Pecos the present prospects are less favorable.

RIO GRANDE WATERSHED

Summary of Federal and State Cooperative Snow Surveys
Issued March 10, 1943, at Fort Collins, Colo.

No.	Main Drainage and Snow Course	Local Drainage	Location			Elev.	National Forest	Mar. 1 Snow Cover Measurements					
								Av. Snow Depth			Av. Water Content		
			State	Locality	Description			Av.@	1942	1943	Av.@	1942	1943
								In.	In.	In.	In.	In.	In.
	RIO GRANDE												
26	Wolf Creek Pass	South Fork	Colo.	Wolf Cr.Pass	4-37N-2E	10000	Rio Grande	74.0	74.9	72.5	22.5	20.1	23.6
27	Upper Rio Grande	Rio Grande	"	RioGrande Res.	13-40N-4W	9350	" "	--	--	20.0	--	--	5.6
47	Silver Lakes	Alamosa R.	"	1mi.S.Silver L.	15-36N-5E	9600	" "	21.9	18.6	21.6	4.5	3.1	4.5
49	River Springs	Conejos R.	"	10mi.W.Mogote	25-33N-6E	9300	" "	26.5	22.9	24.2	6.6	4.4	6.8
74	LaVeta Pass #2	SanCristoCr.	"	LaVeta Pass	22-28S-70W	9300	SanCristoGr	--	24.3	26.7	--	3.7	5.7
76	Summitville	Wightman Cr.	"	Summitville	30-37N-4E	11500	Rio Grande	60.9	78.5	54.9	16.9	22.3	14.9
77	Cumbres Pass #2	Los Pinos R.	"	Cumbres Pass	17-32N-5E	10000	" "	68.8	57.7	63.1	22.3	16.1	20.9
80	Santa Maria	N.Clear Cr.	"	Santa Maria Res.	8-41N-2W	9700	" "	18.9	18.6	22.4	4.2	3.9	6.3
82	Culebra	Culebra R.	"	12mi.E.SanLuis	37.2N105.2W	10000	SanCristoGr	35.4	35.5	19.8	9.5	8.0	6.1
84	Fort Garland	Big Ute Cr.	"	6mi.N.Ft.Garland	13-29N-72W	8200	" " "	--	14.0	--	--	2.8	—
1	Red River	Red River	N.Mex.	6mi.SE.RedRiver	29-28N-15E	9500	Carson	28.8	30.4	24.8	8.1	6.6	8.6
2	Taos Canyon	Rio de Taos	"	14mi.E.Taos	10-25N-15E	9000	"	20.4	21.0	12.5	6.0	4.8	4.2
4	Aspen Grove	Rio En Medio	"	10mi.NE.Santa Fe	12-18N-10E	9100	Santa Fe	20.7	16.8	17.5	5.2	3.8	4.4
5	Lee Ranch	Jemez Cr.	"	5mi.NW.Bland	3-18N-4E	9050	" "	29.6	33.8	20.0	7.4	6.8	6.0
6	Canjilon	Canjilon Cr.	"	8mi.NE.Canjilon	4-26N-6E	9500	Carson	48.7	36.1	42.5	17.3	10.5	17.2
7	Rio Nutrias	Rio Nutrias	"	10mi.SE.ParkView	6-27N-5E	7900	"	18.0	18.1	12.0	4.6	2.4	2.4
9	Hematite Park*	Red River	"	3mi.SE.Red R.	8-28N-15E	9500	Carson	19.9	21.5	10.4	5.4	3.6	2.6
12	Tres Ritos	Agua Piedra	"	7mi.W.Holman	23-22N-13E	9000	"	23.5	29.7	16.4	6.2	7.2	3.9
15	Pay Role	Rock Creek	"	4mi.SE.Hopewell	16-28N-7E	10000	"	33.8	30.2	25.1	8.6	5.3	7.1
16	Jicarilla	Rock Lake Cr.	"	15mi.S.Dulce	9-29N-1W	8500	Jicarilla R	16.1	19.9	8.4	4.6	4.6	2.3
17	Chama Divide	Willow Creek	"	6mi.W.Chama	36.9N-106.7W	7750	OffForest	21.1	20.1	18.3	6.3	5.0	5.8
18	Chamita	Chamita Cr.	"	6mi.NW.Chama	36.9N-106.7W	8500	" "	37.9	34.5	31.2	10.8	7.2	9.1
19	Cordova	Cordova Canyon	"	2mi.W.Tres Ritos	22-22N-13E	10100	Carson	38.4	45.9	30.9	10.0	11.7	8.3
20	Panchuela #2	Panchuela Cr.	"	2mi.N.Cowles	27-19N-12E	8300	Santa Fe	14.7	15.2	10.9	4.0	3.5	2.9
21	Big Tesuque	Big Tesuque Cr.	"	10mi.NE.Santa Fe	17-18N-11E	10000	" "	18.4	20.1	16.7	5.6	5.9	5.2
					Average for Drainage			31.7	31.8	26.2	8.9	7.6	7.9
	CANADIAN												
9	Hematite Park	Morena Creek	N.Mex.	3mi.SE. Red R.	8-28N-15E	9500	Carson	19.9	21.5	10.4	5.4	3.6	2.6
10	Ocate Mesa	Ocate Creek	"	3mi.E.Black L.	25-24N-16E	9200	Off Forest	12.4	8.8	7.5	3.7	3.3	1.5
					Average for Drainage			16.2	15.2	9.0	4.6	3.4	2.0

*On adjacent drainage
@Average for period of record.